

**REMARKS**

The Examiner is thanked for the due consideration given the application.

Upon entry of this amendment claims 1, 2, 5, 9-18, 20-25, 27-35 and 37 are pending in the application. Claims 4, 6, 7 and 8 have been cancelled and their subject matter has been generally incorporated into claim 1.

No new matter is added to the application by any of the amendments in this paper.

Entry of this amendment is respectfully requested because it cancels claims and places the application in condition for allowance. Also, it is respectfully noted that the closest prior art of JP 08-130202 A2 has not been meaningfully considered by the Examiner, and the application should thus be under non-final rejection because a clear issue (in light of this art) has not been developed.

**Rejection Under 35 USC §112, Second Paragraph**

Claim 6 has been rejected under 35 USC §112, second paragraph as being indefinite. This rejection is respectfully traversed.

The Official Action asserts that claim 6 (now incorporated into claim 1) sets forth the second plate is not rotatable, but that claim 1 sets forth a rotating means for rotating the second plate.

However, the amendments to claim 1 include defining the rotating means as "rotating means for rotating said holding means" such that reference to rotating the second plate has been removed.

The claims are thus clear, definite and have full antecedent basis.

This rejection is believed to be overcome, and withdrawal thereof is respectfully requested.

### **Art Rejections**

Claims 1-11, 13 and 14 have been rejected under 35 USC §103(a) as being unpatentable over U.S. Patent 6,632,292 ("AEGERTER") in view of U.S. Publication 2002/0050244 ("ENGESSER") and U.S. Publication 2002/0162570 ("CAVAZZA").

Claim 12 has been rejected under 35 USC §103(a) as being unpatentable over AEGERTER in view of ENGESSER and CAVAZZA, and further in view of U.S. Patent 6,890,390 ("AZAR").

Claim 15 has been rejected under 35 USC §103(a) as being unpatentable over AEGERTER in view of ENGESSER and CAVAZZA, and further in view of U.S. Patent 4,401,131 ("LAWSON").

Claim 16 has been rejected under 35 USC §103(a) as being unpatentable over AEGERTER in view of ENGESSER and CAVAZZA, and further in view of U.S. Patent 5,788,453 ("DONDE").

Claim 17 has been rejected under 35 USC §103(a) as being unpatentable over AEGERTER in view of ENGESSER and

CAVAZZA, and further in view of U.S. Patent 6,532,977 ("OTSUKI").

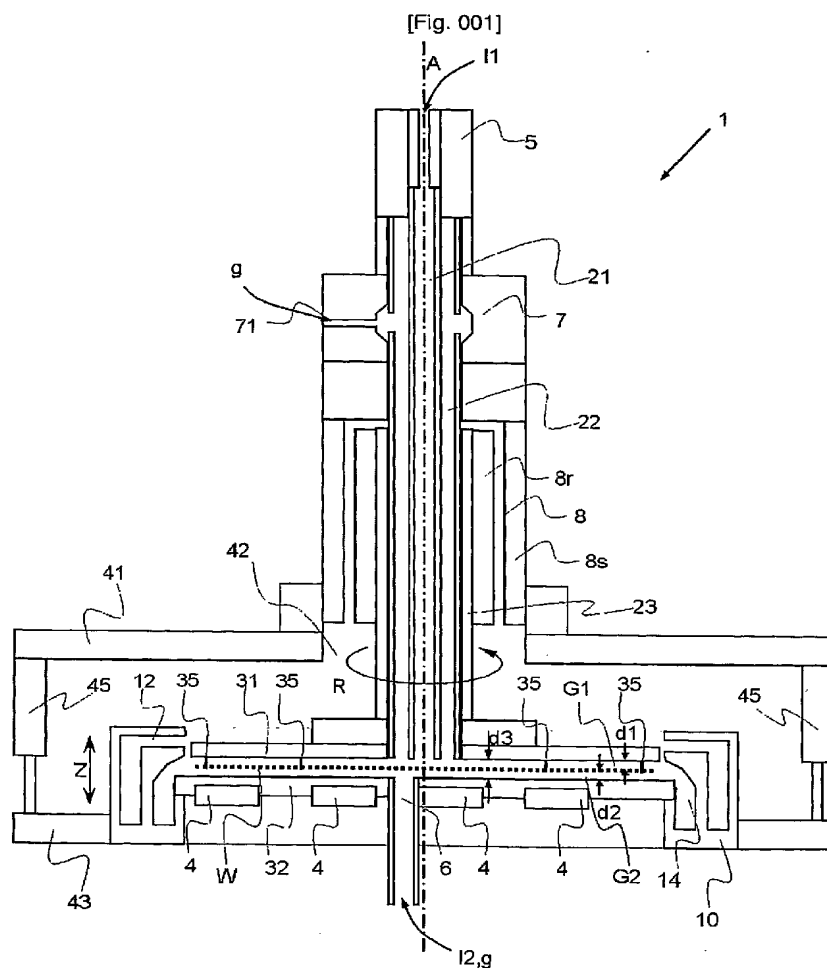
Claims 22-24, and 27-30 have been rejected under 35 USC §103(a) as being unpatentable over AEGERTER in view of ENGESSER, CAVAZZA, U.S. Publication 2004/0132318 ("KIM") and AZAR.

Claim 25 has been have been rejected under 35 USC §103(a) as being unpatentable over AEGERTER in view of ENGESSER, CAVAZZA, KIM and AZAR, and further in view of U.S. Patent 5,762,708 ("MOTODA").

Claim 31 has been have been rejected under 35 USC §103(a) as being unpatentable over AEGERTER in view of ENGESSER, CAVAZZA and U.S. Publication 20040132318 ("KIM").

All of the aforesaid rejections are respectfully traversed.

The present invention pertains to a method and device for the wet treatment of wafers that is illustrated, by way of example, in Figure 1 of the application, which is reproduced below.



As is shown in Figure 1, the present invention includes a first plate and a second plate substantially parallel to the first plate, and a wafer is held between the first and the second plate substantially parallel. A first dispenser introduces fluid into a first gap between the first plate and the wafer when being treated, and a second dispenser introduces fluid into a second gap between the second plate and the wafer when being treated. At least one vibrating element is acoustically coupled to at least the second plate, and a holder and the second plate are

rotated relative to each other about an axis substantially perpendicular to the second plate.

Also, the holding means and the first plate are coupled to each other to form a holding unit, and the second plate is not rotatable. A liquid collector is circumferentially surrounding the holding means for collecting liquid that flows off a wafer during being treated with liquid, and the second plate is sealed against said liquid collector. See instant claim 1.

The advantages of those features (newly incorporated into claim 1) are described as follows:

To couple holding means and first plate to each other to form a holding unit brings the advantage that the mechanics for the holding means can be housed in the first plate.

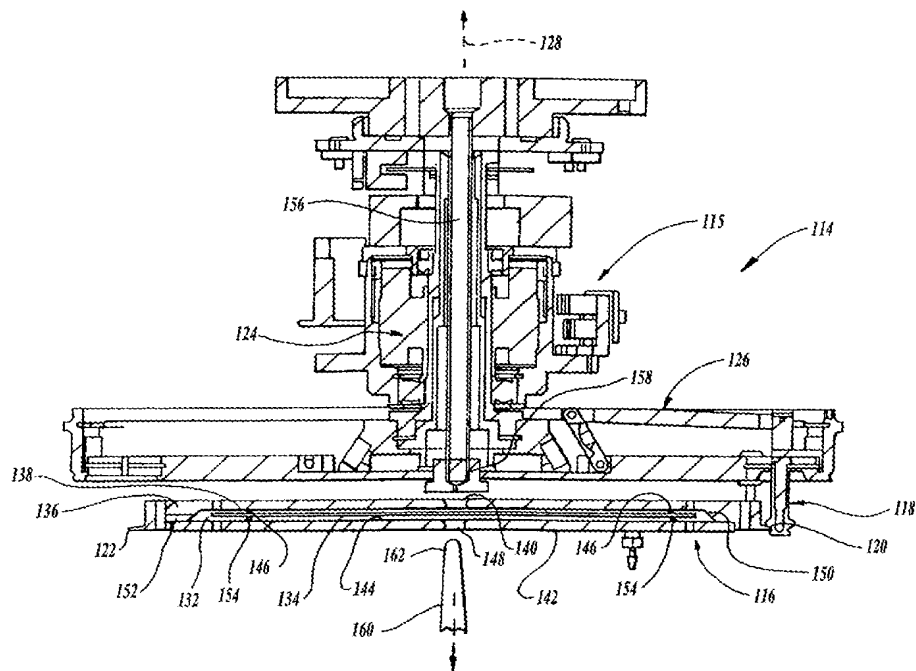
The second plate not being rotatable brings the advantage that the plate carrying the vibrating element does not need to be rotated, which is positive with respect to the electronics typically attached or connected to vibrating elements such as piezoelectric transducers.

The invention further includes a liquid collector, which is circumferentially surrounding the holding means for collecting liquid that flows off a wafer during being treated with liquid. Such a liquid collector is also called cup or splashguard. The second plate is sealed against said liquid collector, which protects the vibrating elements and their electronics from being wetted. This could also be achieved by

permanently welding the second plate to the liquid collector or forming both parts out of one body keeping them together.

These advantages are neither disclosed nor inferred by the applied art.

AEGERTER pertains to wafer treatment. The Official Action refers to Figure 4 of AEGERTER, which is reproduced below.



**Fig.4**

The device of AEGERTER includes a first plate, a second plate substantially parallel to said first plate, holding means for holding a wafer between said first and said second plate substantially parallel to said plates, first dispensing means for introducing fluid into a first gap between said first plate and a wafer when being treated, and second dispensing means for

introducing fluid into a second gap between said second plate and a wafer when being treated.

However, AEGERTER does not disclose at least one vibrating element acoustically coupled to at least said second plate, and rotating means for rotating said holding means and said second plate relative to each other about an axis substantially perpendicular to said second plate.

Paragraph 9 of the Official Action asserts: "Aegarter discloses rotating means in the form of a rotor (Ref. #115) and rotor motor assembly (Ref. #124), in accordance with applicant's specification, for rotating the work piece housing, which includes the wafer and second plate, **relative to each other** about an axis substantially perpendicular to the second plate (Col. 9, lines 62-Col. 10, line 14; Figure 4)"(emphasis added).

This assertion totally neglects the fact that AEGERTER not at all discloses any rotation of wafer and second plate relative to each other (neither does the wafer rotate against the second plate nor does the second plate rotate against the wafer). The Office Action states that the housing rotates namely "...work piece housing, which includes the wafer and second plate ...". So the Office understood that the wafer rotates together with the second plate. Therefore, it is not understood why the Office still could make such a misinterpretation that the wafer rotates and the second plate rotate relative to each other.

This argument was already brought up with the response to the last Official Action.

The Official Action also tries to differentiate between the phrase "relative against each other" and "relative to each other".

However, it should be noted that the terms "relative to each other" and "relative against each other" basically have the same meaning, which is that these two plates separately move no matter whether they move in the same directions at different speeds or even in different directions. It only means that speed of the first plate is not the same as speed of the second plate. "not the same speed" implies not the same RPM but same direction (e.g.  $v_1 = +50\text{RPM}$   $v_2 = +51\text{RPM}$ ) or same RPM but different direction ( $v_1 = +50\text{RPM}$   $v_2 = -50\text{RPM}$ ) or different RPM and different directions ( $v_1 = +50\text{RPM}$   $v_2 = -51\text{RPM}$ ). The term that two elements rotate against each other even leaves it open that one of these elements does not at all rotate but rather only the other one rotates.

In regards to amended claim 1 there is no need for the term "rotating means for rotating and said second plate relative to each other about an axis substantially perpendicular to said second plate" because the second plate no longer rotates.

For claims 22 and 31 the relative rotating is kept upright in order to cover the following embodiments:



A) holding means not rotating - second plate rotating;

B) holding means rotating - second plate not rotating;

and

C) holding means rotating - second plate rotating but at different speeds (same or different directions).

Additional distinctions of the present invention over the applied art have been made of record in the application which, for brevity, are not repeated here.

As a result, one of ordinary skill and creativity would fail to produce a claimed embodiment of the present invention from any combination of the applied art references. A *prima facie* case of unpatentability has thus not been made.

These rejections are believed to be overcome, and withdrawal thereof is respectfully requested.

**Conclusion**

The Examiner is thanked for considering the Information Disclosure Statement filed December 15, 2005 and for making an initialed PTO-1449 Form of record in the application.

As no issues remain, the issuance of a Notice of Allowability is accordingly respectfully solicited.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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